

**Appln No. 10/524,606**  
**Amdt date June 5, 2007**  
**Reply to Office action of February 5, 2007**

**REMARKS/ARGUMENTS**

Claims 1-75 were pending in this application when last examined by the Examiner. Claims 1, 2, 11, 12, 27, 34, 36, 38-42, 45, 57-58, and 67 have been amended. Claims 47-56 and 68-75 have been canceled. The amendments find full support in the original specification, claims and drawings. No new matter has been added. In view of the above amendments and remarks that follow, reconsideration and an early indication of allowance of the now pending claims 1-46 and 57-67 are respectfully requested.

As an initial matter, the Examiner did not acknowledge the Information Disclosure Statement and form PTO/SB/08A/B dated February 14, 2005. A copy of the IDS and PTO form is enclosed for the Examiner's reference. It is respectfully requested that the Examiner return an initialed copy of the PTO form with the next communication from the Office indicating that the Examiner has considered the listed references in the examination of this application.

Claims 1-66 and 68-75 are rejected under 35 U.S.C. 101 as being drawn to non-statutory subject matter. Claims 47-56 and 68-75 have been canceled. Independent claim 1 has now been amended to include, *inter alia*, "a method for classifying an object into one of a number  $n$  of classes wherein  $n$  is 2 or more, wherein information concerning said object is provided in a plurality of test data  $T$ ." Similar amendments have been made to independent claims 11 and 57. Applicants submit that the claims, as amended, now provide a useful, concrete and tangible result and as such, now constitute patentable subject matter. Withdrawal of the rejection under 35 U.S.C. 101 is respectfully requested.

Claims 1, 11, and 67 are rejected under 35 U.S.C. 102(b) as being anticipated by *Wang et al.* Claim 1 have been amended to include, *inter alia*, "extracting a plurality of emerging patterns from a training data set  $D$  that has at least one instance of each of  $n$  classes of data corresponding to said  $n$  classes, wherein each of said emerging patterns comprises a plurality of conjunctive conditions, each condition having a variable and a constraint, and wherein a plurality of occurrences satisfy said conditions for an  $i$ th one of said  $n$  classes of data, but no occurrence satisfies said conditions for a remainder of said  $n$  classes of data." Similar amendments have been made to claims 11 and 67.

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*Wang et al* teaches a method of monitoring gene expression profile changes in carcinomas using a cDNA microarray. *Wang et al* selects individual variables (namely, the cDNA probes) that are expressed differentially between the two classes. The expression difference is measured by fold, namely the absolute expression level in one class divided by the absolute expression level at the other class.

This is very different from the emerging pattern system and method as now positively claimed in claims 1, 11, and 67. As now positively recited in claims 1, 11, and 67, an emerging pattern (EP) is a pattern that "comprises a plurality of conjunctive conditions, each condition having a variable and a constraint." Take for example 'gene A's expression level' is 'less than 1000.0'. The first part is a variable, while the second part is a constraint. Given a pattern, if "a plurality of occurrences satisfy said conditions" in this pattern, "but no occurrence satisfies said conditions for a remainder of said n classes of data" as is recited in claim 1 and similarly required by the other independent claims, then this pattern is an emerging pattern. These emerging pattern systems and methods are not disclosed or even suggested in the *Wang et al* reference.

Applicants therefore submit, that independent claims 1, 11, and 67, as presently amended, are not both novel and non-obvious over the *Wang et al* reference.

Claims 2-10, and 12-46 are also in condition for allowance because they depend on an allowable base claim, and for the additional limitations that they contain..

Claims 71 and 73 were rejected as being anticipated by *Gerakis et al*. These claims have been canceled.

Claims 47 and 57 were rejected as being obvious over *Ramaswamy et al.*, in view of *Sheppard* and *Wang et al*. Claim 47 has been canceled. With respect to claim 57, the Examiner acknowledges that neither *Ramaswamy et al* nor *Sheppard* teach extracting a plurality of emerging patterns from said data set. The Examiner, however, asserts that the emerging patterns are taught by *Wang et al*. However, claim 57 has also been amended to include, *inter alia*, "extract a plurality of emerging patterns from said data set, wherein each of said emerging patterns comprises a plurality of conjunctive conditions, each condition having a variable and a

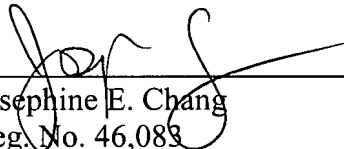
**Appln No. 10/524,606**  
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constraint, and wherein a plurality of occurrences satisfies said conditions for said first class of data, but no occurrence satisfies said conditions for said first class of data, but no occurrence satisfies said conditions for said second class of data or wherein an alternate plurality of occurrences satisfies said conditions for said second class of data, but no alternate occurrence satisfies said conditions for said first class of data." (Emphasis added). Applicants submit that none of the cited references, either alone or in combination, teach or suggest the use of emerging patterns as outlined in amended Claim 57. Therefore, Claim 57 is patentably distinct over the cited references.

Claims 58-66 are also in condition for allowance because they depend on an allowable base claim, and for the additional limitations that they contain.

In light of the above amendments, Applicant respectfully requests reconsideration and an early indication of allowance of the now pending claims 1-46 and 57-67.

Respectfully submitted,  
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Encl: Copy of IDS dated 2/14/05  
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